

What is claimed:

1. A method for reducing the tensile strength of ice, comprising contacting the ice with a hydrocolloid in a sufficient amount to reduce the tensile strength of the ice, wherein the tensile strength of the resultant ice is lower than the tensile strength of ice not contacted with the hydrocolloid.
2. The method of claim 1, wherein after the contacting step, the ice has a tensile strength of 10% to 90% lower than the tensile strength of ice that has not been contacted with the hydrocolloid.
3. The method of claim 1, wherein the hydrocolloid comprises an exopolymer or a derivative thereof.
4. The method of claim 3, wherein the exopolymer is produced from a microorganism from the kingdom protista or kingdom monera.
5. The method of claim 4, wherein when the microorganism is from the kingdom protista, the microorganism is from the phyla Acrasiomycota, Chrysophyta, Euglenophyta, Rhizopoda, Actinopoda, Chytridomycota, Foraminifera, Rhodophyta, Apicomplexa, Ciliophora, Myxomycota, Zoomastigophora, Dinoflagellata, Chlorophyta, Oomycota, Diplomonada, or Phaeophyta.
6. The method of claim 3, wherein exopolymer is produced from a microorganism from the phylum Bacillariophyta.
7. The method of claim 4, wherein when the microorganism is from the kingdom monera, the microorganism comprises a cyanobacteria, an archaeobacteria, a methanogen, an extreme halophile, a thermoacidophile, or an eubacteria.
8. The method of claim 1, wherein the hydrocolloid is produced from a microalga, a microphyte, an unicellular alga, or an eubacteria.
9. The method of claim 1, wherein the hydrocolloid is produced from *Melosira arctica*.

10. The method of claim 1, wherein the hydrocolloid comprises agar, arabinoxylan, carrageenan, carboxymethylcellulose, cellulose, curdlan, gelatin, gelan,  $\beta$ -glucan, guar gum, gum Arabic, locust bean gum, pectin, starch, or a combination thereof.
11. The method of claim 1, wherein the hydrocolloid comprises alginic acid or a salt thereof.
12. The method of claim 1, wherein the hydrocolloid comprises Xanthan gum or a derivative thereof.
13. The method of claim 1, wherein the amount of hydrocolloid in the contacting step is greater than or equal to 0.05 g/L.
14. The method of claim 1, wherein the amount of hydrocolloid in the contacting step is from 0.05 g/L to 10 g/L.
15. The method of claim 1, wherein the amount of hydrocolloid in the contacting step is from 0.2 g/L to 5 g/L.
16. The method of claim 1, wherein the ice is present in a harbor or waterway.
17. A method for producing ice with reduced tensile strength, comprising prior to ice formation, mixing a hydrocolloid with water in a sufficient amount to reduce the tensile strength of the resultant ice, wherein the tensile strength of the resultant ice is lower than the tensile strength of ice not produced with the hydrocolloid.
18. The method of claim 17, wherein the water comprises saline water.
19. The method of claim 17, wherein the water comprises fresh water.
20. Ice produced by the method of claims 1-19.

21. A composition comprising ice and a hydrocolloid, wherein the ice has a tensile strength of 10% to 90% lower than the tensile strength of ice that has not been contacted with the hydrocolloid.
22. A method for reducing ice formation on an article, comprising contacting the article with a hydrocolloid.
23. A refrigerant comprising a hydrocolloid.
24. A cooling system comprising the refrigerant of claim 23.
25. A method for facilitating the removal of ice on an article, comprising prior to exposing the article to freezing conditions, contacting the article with a hydrocolloid.
26. A method for reducing the diffusivity of a dissolved material at an ice-water interface, comprising contacting the ice with a hydrocolloid or, prior to ice formation, mixing the hydrocolloid with water.
27. A method for reducing the permeability of ice, comprising contacting the ice with a hydrocolloid or, prior to ice formation, mixing the hydrocolloid with water.
28. A method for retaining dissolved materials in ice, comprising contacting the ice with a hydrocolloid or, prior to ice formation, mixing the hydrocolloid with water.
29. A lubricant comprising a hydrocolloid.
30. A method for protecting agricultural products against frost, comprising contacting the product with a hydrocolloid.
31. A method for protecting microbial species, comprising contacting the microbial species with a hydrocolloid.